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KNOWLEDGE, LUCK AND VIRTUE

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ABSTRACT. This paper offers an overview of a theory of knowledge known as *anti-luck virtue epistemology*. This is an account of knowledge which combines both an anti-luck condition and a virtue condition, and which is thereby able to avoid problems which face some of the main competing accounts of knowledge, particularly those offered by proponents of *robust virtue epistemology*. In particular, it is able to accommodate the *epistemic dependence* of knowledge on external factors, where this has both a positive and a negative aspect. Relatedly, it can also avoid the problem posed by *epistemic twin earth* cases.

1. THE ANALYTICAL PROJECT IN EPISTEMOLOGY

Since Edmund Gettier's (1963) famous article challenging the traditional tripartite account of knowledge in terms of justified true belief, epistemologists have become increasingly sceptical about the prospects for offering an analysis of knowledge. The source of this scepticism in part lies in a wider scepticism about analytical projects of this kind, whether as regards knowledge specifically or any other philosophically interesting notion. Scepticism from this source is particularly pressing if one takes the analytical project in epistemology to be concerned with offering an informative and non-circular analysis of knowledge, since analyses of this kind are hard to find.¹ There is a different source of scepticism about the analytical project in epistemology, however, one that is specific to this particular project (i.e., rather than being directed at analytical projects in general). This is that our continued failure to successfully complete this project implies, via a kind of pessimistic induction, that no solution is available, and hence that we should abandon the project.²

I think that such scepticism about the analytical project in epistemology is premature. For while it is admittedly true that the recent history of epistemological engagement with this project has been characterised by ultimate failure, whether or not this shows that the project is hopeless very much depends on whether we think that we have made progress towards offering a solution. For if we have made progress, then that severely weakens the basis for the pessimistic induction. My own view is that not only have we made progress on the analytical problem in recent years, but that we can actually *solve* this problem. The main goal of this paper is to set out my favoured solution to the analytical problem.

Before we get to this issue, however, we need to say a bit more about what the analytical project involves. I want to suggest that what we are seeking in this regard is an informative analysis of knowledge, where this need not also be a non-circular analysis. One might find this puzzling, since wouldn't an informative analysis be non-circular? I think this is mistaken. Indeed, I think that informative analyses and non-circular analyses can come apart from one another in both directions. *Ad hoc* analyses, for example, may well be non-circular, but aren't thereby informative. Consider, for instance, the claim that knowledge is justified true belief plus whatever condition needs to be added to exclude Gettier-style cases. That clearly isn't very informative, though it is arguably non-circular.³

It is the other direction of fit that is of more interest to us, however, which is whether informative analyses can be circular. While a non-circular analysis is surely desirable, not all circular analyses are uninformative. It might be possible to inter-define a range of philosophical notions, such that a great deal of light is thereby cast upon these notions, without one ever offering a way out of the hermeneutic circle. This would thus be a case of an informative, albeit ultimately circular, analysis. As we will see, it could be that the best we can hope for in terms of an analysis of knowledge is something of this kind. In any case, the overriding point is that our primary objective with regard to the analytical problem is to offer an informative analysis of knowledge; if we can in addition offer a non-circular analysis then this will be a bonus.⁴

2. KNOWLEDGE, LUCK AND VIRTUE

I noted above that one point on which I depart from the sceptics regarding the analytical project is that I claim that we have made progress in our post-Gettier efforts to answer the analytical problem. This progress has come along at least two fronts. First, there has been a recognition of what kind of

fundamental constraints that a theory of knowledge must answer to. Second, there has been concrete progress in terms of offering plausible accounts of knowledge, where this means accounts of knowledge that are at least in the ballpark of being correct. Let's take these points in turn.

One point that Gettier-style cases remind us of very forcefully is that there exists a kind of knowledge-undermining epistemic luck which is not excluded by the justification condition as it is traditionally understood. In particular, such cases remind us that when one knows one's cognitive success (i.e., one's true belief) is not a matter of luck. Call this the *anti-luck platitude*. Gettier-style cases highlight the point that merely adding a justification condition to knowledge will not suffice to accommodate the anti-luck platitude.

The anti-luck platitude intersects in interesting ways with another platitude that guides our thinking about knowledge, which is the *ability platitude*. According to the ability platitude, when one knows one's cognitive success is attributable in some significant way to one's cognitive agency, where this means attributable to the exercise of relevant cognitive ability.⁵ Mere true belief does not amount to knowledge because it offends against both of these platitudes, in that one can gain a mere true belief by luck, and one's mere true belief need not be attributable in any significant way to one's cognitive agency. On the face of it, adding the justification condition to true belief gets around this problem, since it captures both a sense in which one's cognitive success must be attributable to one's cognitive agency and a sense in which it excludes knowledge-undermining epistemic luck.

What the Gettier-style cases demonstrate, however, is that the justification condition at most accommodates the ability platitude, and does not handle the anti-luck platitude. Recognising this point is important to the prospects for answering the analytical problem, since it highlights that these two platitudes are imposing distinct demands on our theory of knowledge. That is, prior to the Gettier debate we might well have supposed that whatever epistemic condition which accommodates one of these platitudes will thereby accommodate the other. Indeed, we might well have antecedently thought that these two platitudes are effectively just two sides of the same coin, in that a cognitive success that is not due to luck is thereby one which is attributable to cognitive agency, and *vice versa*. What we discover by engaging with the Gettier-style cases, however, is that matters are not nearly so straightforward, and that at the very least we cannot expect an epistemic condition that satisfies the ability platitude to thereby satisfy the anti-luck platitude. (Indeed, as we will see below, it is also the case that we shouldn't expect an epistemic condition that satisfies the anti-luck platitude to thereby satisfy the ability platitude, though this result isn't immediately generated by the Gettier debate).

That this point is (at least tacitly) recognised in the post-Gettier literature can be discerned by how epistemologists eventually moved away from the ‘another puncture, another patch’ approach to the Gettier problem, whereby one tries to tweak the classical account in order to get it to evade the Gettier-style cases.⁶ Instead the debate moved towards more constructive strategies, such as offering specifically anti-luck conditions on knowledge and developing epistemic conditions that aim to capture the ability platitude in such a way as to thereby also capture the anti-luck platitude.

This leads to my second point about the progress we have made on the analytical problem, which concerns the plausible accounts of knowledge that have been offered in the recent literature. I think the clearest example of philosophical progress on this score comes from *virtue epistemology* (where this proposal is broadly construed such that it essentially appeals to cognitive abilities, cognitive faculties, intellectual virtues, and such like). Now it should be noted from the off that a certain brand of post-Gettier virtue epistemology has eschewed the whole project of offering an analysis of knowledge, and many of the exponents of this kind of virtue epistemology may well be willing to endorse the kind of scepticism about the analytical project noted above.⁷ There has been another kind of virtue epistemology, however, which has explicitly tried to capture the idea that there is a way of understanding the sense in which knowledge requires cognitive agency, *à la* the ability platitude, in such a way that it thereby captures the anti-luck platitude. If this approach works, the result is an adequate and informative account of knowledge. Elsewhere, I have referred to this kind of proposal as *robust virtue epistemology*, in that it aims to offer a completely virtue-theoretic account of knowledge.⁸

In outline, the guiding idea behind robust virtue epistemology is that there is more to knowledge than the conjunction of cognitive success and the exercise of cognitive agency (i.e., of a kind that might generate justification). Such a merely conjunctive view lies open to Gettier-style cases, in that epistemic luck can intervene between the satisfaction of the two conditions. Instead, what is required is an account of knowledge that demands that the subject’s cognitive success stands in an appropriate relation to her exercise of cognitive agency. This is usually glossed as the claim that the cognitive success should be *because of* cognitive agency.

The most natural reading of ‘because of’ in this context is in terms of causal explanation.⁹ So to say that the subject’s cognitive success is because of her cognitive agency is to say that her cognitive agency plays an overarching role in the causal explanation of her cognitive success. So construed, the account offers a very plausible way of dealing with Gettier-style epistemic luck. In standard Gettier-style cases, after all, although the agent is cognitively successful and displays

cognitive agency, the epistemic luck at issue ensures that the subject's cognitive agency doesn't play an overarching role in her cognitive success.

The devil, though, lies in the details. In particular, such a virtue-theoretic account of knowledge doesn't adequately deal with all cases of knowledge-undermining epistemic luck. Indeed, as I've argued at length elsewhere, the general problem facing robust virtue epistemology is that it cannot accommodate the phenomenon of *epistemic dependence*, where this means the extent to which knowledge is dependent upon factors (over and above the truth of the target belief) outwith one's cognitive agency.¹⁰ Such dependency comes in both a negative and positive form. *Positive epistemic dependence* concerns cases in which one exhibits a low level of cognitive agency which would not normally be sufficient for knowledge, but where one knows nonetheless due to factors outwith one's cognitive agency. *Negative epistemic dependence*, in contrast, concerns cases in which one exhibits a high level of cognitive agency which would normally be sufficient for knowledge, but where one lacks knowledge nonetheless due to factors outwith one's cognitive agency.

One can get a handle on negative epistemic dependence by considering what I call an *epistemic twin earth case*. Consider two counterpart agents, one on earth and one on twin earth, who are microphysical duplicates with identical causal histories. Moreover, both agents inhabit identical physical environments, both in terms of their local environment (i.e., their current environment which they are causally interacting with) and in terms of their global environment (i.e., the environment which they would be normally causally interacting with, where this could be different from their local environment). The only difference between our two agents' circumstances concerns their modal environment, in that there is a close possibility of error that's applicable on twin earth that isn't applicable on earth. The upshot of this difference in the modal environment is that a true belief which is common to both subjects can differ in terms of whether it is subject to epistemic luck, in that the true belief formed on twin earth can be such that it could very easily have been false (unlike the corresponding belief formed on earth).

The crux of the matter is that the two subjects' true beliefs, formed on earth and twin earth, are equally attributable to their exercise of cognitive agency, even despite the difference in their susceptibility to epistemic luck—i.e., if the true belief formed on earth counts as a cognitive success which is because of cognitive ability, then the same applies to the true belief formed on twin earth. Manifestations of cognitive agency can be relative to features of one's actual and normal environment, but they are not relative to one's modal environment. Indeed, this point applies to agency more generally. One's ability to play piano is relative to a range of relevant conditions, such

that it wouldn't be a count against one's possession of this ability that one cannot play piano underwater. Being able to play piano underwater is, after all, a very different ability from the general ability to play piano. But playing piano when one could so very easily be underwater (but isn't), is not to manifest a special kind of piano playing ability, but is rather to manifest one's ordinary piano playing ability in conditions under which one's manifestation of that ability is *fragile*—i.e., one could very easily fail to manifest that ability.¹¹

The epistemological moral is that the true beliefs formed on earth and twin earth do not differ in terms of the level of cognitive agency on display, even though they do differ in terms of whether or not they count as knowledge on account of the epistemic luck in play. Knowledge is thus not fragile in the way that manifestations of (cognitive) agency can be. This is negative epistemic dependence, in that a level of cognitive agency that would ordinarily suffice for knowledge does not suffice in virtue of factors outwith the subject's cognitive agency, in this case features which are exclusive to the modal environment.¹²

The easiest way to grasp positive epistemic dependence is via cases of testimonial knowledge involving a high degree of trust. It is fairly standard to allow that such knowledge is *bona fide*.¹³ The problem it poses for robust virtue epistemology, however, is that in such cases the knowledge acquired doesn't seem to involve a cognitive success that is because of the *subject's* exercise of cognitive agency, as opposed to her *informant's*. Notice that the claim in play here is not the strong contention that testimonial knowledge can be acquired even when the subject fails to manifest *any* relevant cognitive agency.¹⁴ That claim is problematic since even in cases where a high level of trust is involved, for it to count as testimonial knowledge it seems that the subject ought to manifest some significant degree of relevant cognitive ability (e.g., that she wouldn't just ask anyone, that she wouldn't just believe anything, and so on). The testimonial case is thus not meant to be a counterexample to the ability intuition. The crux of the matter, however, is that in the right kind of conditions—i.e., where the environment is especially epistemically friendly—then very little by way of manifestation of cognitive agency on the part of the subject can nonetheless suffice for knowledge, *contra* robust virtue epistemology.

The phenomenon of epistemic dependence highlights the sense in which knowledge involves an interplay between agential and non-agential factors. Knowledge is not just a matter of one's cognitive success being attributable to a high level of cognitive agency, since sometimes a high level of cognitive agency will not suffice for knowledge (negative epistemic dependence), and sometimes a low level of cognitive agency will suffice (positive epistemic dependence). The reason

for this is that knowledge is answering to two distinct constraints, one that is imposed by the ability intuition and another that is being imposed by the anti-luck intuition. Knowledge cannot be exclusively a matter of satisfying an anti-luck condition, since one could satisfy such a condition without this manifesting one's cognitive agency at all (as when a demon ensures that one's beliefs are true regardless of how one forms those beliefs—we will be considering such a case in the next section).¹⁵ But knowledge is not exclusively a matter of satisfying an ability condition (i.e., a virtue condition, broadly conceived) either since, as we have seen, even the manifestation of a very high level of cognitive ability can, in the right conditions, be insufficient for knowledge.

I claim that the moral to be drawn from this is that we need a theory of knowledge which can lay due weight on both the role of cognitive ability in knowledge and also the importance of having a cognitive success which is immune to knowledge-undermining epistemic luck. In particular, we need to capture the interplay between these two notions, as witnessed in cases of epistemic dependence where the epistemic environment has a pivotal role to play in determining whether or not one has knowledge. When such an environment is friendly, such that (as in the testimonial case) one is assured to have a non-lucky cognitive success, then very little by way of cognitive agency can suffice for knowledge. In contrast, when this environment is unfriendly, such that (as in the epistemic twin earth case), one's cognitive success is doomed to be lucky, then even the manifestation of a great deal of relevant cognitive agency will not suffice for knowledge.

Note that capturing this interplay is not merely a matter of having two separate conditions on knowledge, one cast along virtue-theoretic lines and the other an anti-luck condition. Where one has two logically distinct conditions there will always be scope to Gettierise the account by making the joint satisfaction of the two conditions down to epistemic luck. Rather, one needs to formulate the proposal such that while both the anti-luck and ability intuitions are respected, this is not achieved via logically distinct conditions.

3. ANTI-LUCK VIRTUE EPISTEMOLOGY

So how should we formulate our account of knowledge, given the foregoing? Here is my proposal, which I call *anti-luck virtue epistemology*:

Anti-Luck Virtue Epistemology

S knows that *p* iff *S*'s safe cognitive success is the manifestation of *S*'s relevant cognitive abilities, where this safe cognitive success is to a significant degree creditable to *S*'s manifestation of those cognitive abilities.¹⁶

A few points of clarification are required regarding this analysis of knowledge.

First, note that I take the anti-luck condition on knowledge to be captured by the safety principle—*viz.*, the claim that knowledge involves cognitive success that could not easily have been cognitive failure (i.e., false belief). I've defended this thesis at length elsewhere, but it would take me too far afield to review these arguments here.¹⁷ I will therefore take it as given in what follows that safety is the right way to think about the anti-luck condition on knowledge.

Second, notice that the virtue-theoretic element of this analysis of knowledge is both in a sense stronger and in a sense weaker than that demanded by robust virtue epistemology. It is weaker because it is not required that the subject's cognitive success be because of her cognitive agency, but only that it be to a significant degree creditable. In this way, we can allow for cases of positive epistemic dependence, like the testimonial cases involving a high degree of trust, as these are cases where, while there is a significant level of cognitive agency on display, it is not the subject's manifestation of cognitive agency that is playing the overarching role in her cognitive success.

The virtue-theoretic condition imposed as part of anti-luck virtue epistemology is also stronger than that imposed by robust virtue epistemology on account of how it demands that the subject's *safe* cognitive success be significantly creditable to her cognitive agency, and not just her cognitive success *simpliciter*. Once we recognise that knowledge requires safety, and that this condition cannot be captured by a virtue-theoretic condition alone (i.e., such that there is nothing to be gained by 'beefing-up' such a condition as robust virtue epistemology does, and which makes it unable to deal with positive epistemic dependence), then it also becomes clear that one's cognitive agency should play a significant role in the production of one's safe cognitive success. For notice that if we didn't demand this then it would be possible for one's belief to be safe where the safety of the belief had nothing to do with one's manifestation of cognitive agency. But such cases would not constitute knowledge.

In order to see this point, think again about the epistemic twin earth case described above. Let's imagine that the subject and her duplicate on twin earth both gain a true belief by looking at a working clock. Where the subject and her duplicate on twin earth differ is that on twin earth (but not earth) the clock could so very easily have been broken (it's on the very verge of failing, say, but just about hanging on), such that the subject on twin earth could very easily have been forming her

belief about the time by consulting a stopped clock (without being aware of this). The belief formed on twin earth is thus unsafe, and hence doesn't amount to knowledge, in contrast to the belief formed on earth. In both cases, however, the subject's cognitive success is equally attributable to her cognitive agency; indeed, in both cases the cognitive success is plausible because of the subject's exercise of cognitive agency (for note that the clock is not in fact broken in either case).

Now imagine a variation on this case whereby on twin earth there is a demon who is intent on ensuring that our subject forms a true belief by looking at the clock. Accordingly, while the demon doesn't need to do anything in the actual world (since the clock doesn't fail), in those close possible worlds where the clock is broken the demon will intervene to ensure that the clock is showing the correct time regardless. The result is that the subject on twin earth ends up with a safe true belief just like her counterpart on earth, but where the safety of her belief is entirely down to the intervention of the demon and nothing to do with her cognitive agency.

The point of the case is that knowledge seems to be just as much lacking in this example as it is in the previous scenario where the belief was unsafe. The reason why the knowledge is lacking is different in the two cases, however. In the first, this is because the agent has a belief that could very easily have been wrong—there is simply too much epistemic risk in play. This diagnosis is not applicable in the second case, however, in that the subject is assured to form a true belief, as the demon is on hand to ensure this. What goes awry in the second case is rather that the safety of the subject's cognitive success has nothing to do with her manifestation of cognitive agency and everything to do with the would-be intervention of the demon.

I think such cases demonstrate something important about the ability intuition. Although we captured this idea above as the claim that one's cognitive success is significantly attributable to one's cognitive agency, this intuition needs to be unpacked as the stronger claim that one's safe cognitive success is significantly attributable to one's cognitive agency. For a wide range of cases, of course, this is a distinction without a difference, in that often in cases of knowledge it is not just the cognitive success that is attributable to cognitive agency but also the safety of that cognitive success. As we have just seen, however, there are potential cases where these two claims come apart, and when they do we have noted that knowledge demands the stronger claim.¹⁸

Third, notice that the analysis of knowledge on offer makes explicit mention of the fact that the safe cognitive success must be the *manifestation* of the subject's cognitive abilities. It's actually important to any virtue-theoretic condition that it makes this demand, though I don't think many proponents of virtue epistemology recognise this fact. That is, one's safe cognitive success could be

significantly attributable to one's exercise of cognitive agency and yet not count as knowledge because it doesn't involve a manifestation of cognitive agency.

In order to see this point, it will be useful to first notice how this distinction plays out outside of epistemology. That Andy Murray earns millions of pounds from sponsorship deals is significantly creditable to his tennis-playing abilities, but it is not a manifestation of them (it is more akin to a by-product of his manifestation of these abilities). Winning tennis matches, on the other hand, *is* a manifestation of his tennis-playing abilities. Similarly, one can imagine cases of safe cognitive success that are significantly creditable to the subject's cognitive abilities but which don't involve a manifestation of cognitive abilities.¹⁹ Clearly, however, what matters for knowledge is not merely that one's cognitive agency plays an explanatory role with regard to one's safe cognitive success, but rather that this safe cognitive success manifests one's cognitive agency in relevant ways.²⁰

A final point to make about anti-luck virtue epistemology is that it is at least an informative analysis of knowledge, even though it may ultimately be circular. Suppose, for example, that it turns out that one cannot unpack the notions of safety or of cognitive ability without making appeal to knowledge. It would then turn out that this is a circular account of knowledge after all. Even so, I still think that such an analysis would be informative, since it would specify how a cluster of related notions—in particular: epistemic luck, cognitive agency, knowledge—are related to one another.²¹ It would thus on this score at least be an adequate solution to the analytical problem in epistemology. My own view is that anti-luck virtue epistemology probably does offer us a non-circular account of knowledge, but the point is that its adequacy as a solution to the analytical problem is not hostage to this fact.

4. CONCLUDING REMARKS

I have argued that, contrary to the prevailing spirit of pessimism, the analytical project in epistemology can be successfully completed. In particular, I have argued that provided we understand the different constraints that are laid down on a theory of knowledge by the anti-luck and ability intuitions, then we are in a position to identify what is required of an adequate analysis. The result is *anti-luck virtue epistemology*.

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NOTES

¹ This is significant since it is far from obvious that an analysis of knowledge needs to be non-circular, just so long as it is informative. I say more about this point in a moment. For a very helpful discussion of the analytical project in epistemology in this regard, see Zagzebski (1999).

² For an influential statement of scepticism about the analytical project in epistemology (at least insofar as that project is understood as seeking a non-circular analysis anyway), see Williamson (2000).

³ Of course, it may well prove to be indirectly circular in that one can only specify Gettier-style cases in terms of knowledge. But the point being made here is clear enough: non-circularity of an analysis does not guarantee informativeness.

⁴ In principle, then, even a proponent of knowledge-first epistemology, like Williamson (2000), could offer a positive response to the analytical problem. For more on the issue of what is required of an analysis of knowledge, see Zagzebski (1999), DePaul (2009), and Pritchard (2012*d*).

⁵ Note that our concern is with *human* knowledge specifically. If God has knowledge, for example, then it could be that this involves cognitive success that is not attributable to God's cognitive agency on account of how God, in virtue of being omniscient, doesn't need to manifest cognitive agency in order to acquire knowledge.

⁶ For an excellent survey of the immediate post-Gettier literature during its (now infamous) 'another puncture, another patch' phase, see Shope (1983).

⁷ For further discussion of the idea that virtue epistemology might be best thought of as reorienting the concerns of traditional epistemology, such as the analytical project, rather than simply responding to those concerns, see Code (1987), Kvanvig (1992), Montmarquet (1993), Hookway (2003), and Roberts & Wood (2007).

⁸ Robust virtue epistemology is in contrast with *modest* virtue epistemology, which aims to offer, at most, a necessary condition on knowledge along virtue-theoretic lines. I introduced the distinction between robust and modest virtue epistemology—or 'strong' and 'weak' virtue epistemology, as I sometimes express this distinction—in Pritchard (2009*b*, chs. 3-4). See also Pritchard (2009*c*; 2012*a*) and Pritchard, Millar & Haddock (2010, chs. 2-4).

⁹ This is how Greco (2003; 2007; 2008; 2009*a*; 2009*b*) understands the 'because of' relation, though see Greco (2012) for a reworking of his view. The other main proposal in the literature in this regard is due to Sosa (1988; 1991; 2007; 2009). This construes the 'because of' relation in terms of disposition manifestation. That a glass is shattered when hit, for example, could be because it is fragile, where this kind of explanation need not be in competition with a causal explanatory story (e.g., that so-and-so lost his temper and threw the glass at the wall). For specific discussion of Sosa's account, see Pritchard (2009*a*) and Kallestrup & Pritchard (2016). See also Zagzebski (1996; 1999), who treats the 'because of' relation as an indefinable primitive. In order to keep the discussion to a manageable length, I will be focusing on the causal-explanatory construal of the 'because of' relation in the main text.

¹⁰ See especially Kallestrup & Pritchard (2012; 2013; 2014).

¹¹ Of course, it's important to this example that one isn't aware that one could very easily be underwater just now, since playing the piano under those conditions might well require a special kind of ability.

¹² Elsewhere—see Pritchard (2009*a*, chs. 3-4; 2009*b*; 2012*a*) and Pritchard, Millar & Haddock (2010, chs. 2-4)—I have made a distinction between *intervening* and *environmental* epistemic luck, where the former is the kind of epistemic luck that is usually at issue in Gettier-style cases, such that something intervenes between the believing and the fact (but where the belief is true nonetheless). Environmental epistemic luck, in contrast, is when even though nothing intervenes the belief is nonetheless veritically lucky (i.e., in virtue of some feature of the subject's environment, rather than due to an intervention), in that the subject could have easily believed falsely. The barn façade case is an obvious example of environmental epistemic luck, since what makes the belief veritically lucky is not that the object observed is not a genuine barn, but rather that the subject's environment is one in which what looks like a barn will likely not be a barn. Note that environmental epistemic luck is not quite the same as an epistemic twin earth case, in that the latter is a specifically modal case of epistemic luck. That is, what is epistemically amiss in the epistemic twin earth case only concerns the subject's modal environment and not her actual environment (whether local or global), unlike a case of environmental epistemic luck, such as a barn façade case, which could well concern the subject's actual environment (as indeed it does in the barn façade case). See Pritchard (2015) for more on this point.

¹³ Anti-reductionists as regards the epistemology of testimony would surely accept this claim, but even most moderate forms of reductionism could consistently endorse it too. For more on the reductionism/anti-reductionism debate in the epistemology of testimony, see Lackey (2010).

¹⁴ Lackey (2007) argues for this strong contention in response to the so-called 'credit' view of knowledge, which is closely related to (though also importantly different from) what we are here calling robust virtue epistemology.

¹⁵ See, for example, Pritchard (2012*a*) for some examples to illustrate this point.

¹⁶ I've defended anti-luck virtue epistemology in a number of places. See especially Pritchard (2009*b*; 2012*a*) and Pritchard, Millar & Haddock (2010, chs. 1-4).

¹⁷ Safety has been defended in one form or another by a variety of authors. See Luper (1984; 2003), Sainsbury (1997), Sosa (1999), Williamson (2000), and Pritchard (2002). For a defence of safety as an anti-luck condition, see Pritchard (2004; 2005; 2007; 2008; 2009*d*; 2012*c*; 2015). See also the exchange between Hetherington (2013) and Pritchard (2013).

¹⁸ For further discussion of this case, and related scenarios (such as epistemic Frankfurt-style cases), see Pritchard (2015).

¹⁹ See Pritchard (*forthcoming*) for a discussion of some concrete cases of this kind.

²⁰ The idea that knowledge requires manifestation of cognitive abilities in this way is built into Sosa's version of robust virtue epistemology—see, for example, Sosa (2007; 2009). For a helpful recent discussion of the manifestation requirement, see Turri (2011).

²¹ One could thus imagine a version of anti-luck virtue epistemology that is cast along knowledge-first lines, *à la* Williamson (2000). This possibility has been urged on me in conversation by Chris Kelp and Clayton Littlejohn.